REMARKS

Claims 1-2, 6-7, 10-11, 14-17, 19-21, 23, 26-27, 30, 32 and 37 have been amended. No new matter has been added. Support for the claim amendments may be found throughout the specification, for example at p. 5, lines 16-23, p. 7, line 27 to p. 8, line 17, p. 8, lines 19-23, p. 13, lines 22-24, p. 16, lines 17-18, p. 60, lines 1-6, p. 43, lines 1-4, p. 46, lines 15-23, p. 47, lines 14-21, p. 60, lines 1-6 and in the originally filed claims. Claims 4-5, 13, 22, 29, 33-36 and 38 have been cancelled without prejudice. Applicants reserve the right to pursue the subject matter of the claims in a continuing application at a later date.

The specification has been amended to recite the date of deposit for *Lactobacillus sake* strain 570 and the complete name and full street address of the depository.

Claims 1-3, 6-12, 14-21, 23-28, 30-32 and 37 are pending.

CLAIM OBJECTIONS

The Examiner has objected to claims 1-2, 4, 10-11, 13, 16 and 30 and has requested that the hyphen in the term "micro-organism" be removed. See Office Action at p. 2. Claims 4 and 13 have been cancelled thus rendering this objection moot with respect to those claims. Applicants have amended the remaining claims and removed the hyphen in the term "micro-organism."

The Examiner has objected to claim 34 for having a period at the end of line 1. Id. Claim 34 has been cancelled thus rendering this objection moot with respect to this claim.

CLAIM REJECTIONS

Rejection of claims under 35 U.S.C. § 112, first paragraph

The Examiner has rejected claim 37 under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement. See Office Action at p. 2. Specifically, the Examiner states that "[s]ince the microorganism(s) is/are essential to the claimed invention it must be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public." Id. The Examiner contends that "[t]he specification does not disclose a repeatable process to obtain the microorganism(s) and it is not clear from the specification or

record that the microorganism(s) is/are readily available to the public." See Office Action at p. 2-3.

Applicants respectfully submit a declaration from Aksel Buchter-Larsen at Danisco (attached at Appendix A, "Declaration") stating that the deposit of *Lactobacillus sakei* strain 570 was made to the International Depository Authority (DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH ("DSMZ")) as DSM 15889 on September 2, 2003, under the terms of the Budapest Treaty. The Declaration states that the deposits have been made under conditions of assurance of (a) that all restrictions imposed by the depositor on the availability to the public of the deposited microbial strains will be irrevocably removed upon the granting of the patent and (b) access to the deposit will be available during pendency of the patent application making references to the deposit to one determined by the Commissioner of Patents and Trademarks to be entitled thereto under applicable statutes and regulations.

Applicants further attach a deposit receipt and a viability statement from DSMZ for microbial strain DSM 15889 at Appendix B. Applicants have additionally amended the specification to recite the full street address of the depository.

Accordingly, Applicants believe that Applicants have informed and demonstrated to a person having ordinary skill in the art how to use the invention commensurate in scope with the claims. Applicants respectfully request reconsideration and withdrawal of this rejection with respect to claim 37.

Rejection of claims under 35 U.S.C. § 101

The Examiner has rejected claim 16, 29 and 33-36 under 35 U.S.C. § 101 for being improper process claims. See Office Action at p. 4. Applicants have cancelled claims 29 and 33-36 without prejudice thus rendering this rejection moot with respect to those claims. Claim 16 has been amended to refer to a process of preparing a cheese product and includes the step of adding to a medium suitable for forming cheese, a composition according to claim 1. Accordingly, claim 16 is now a proper process claim. Applicants respectfully request the withdrawal of this rejection with respect to claim 16.

Rejection of claims under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 6-17, 19-26, 29, 33-36 and 38 under 35 U.S.C. § 112, second paragraph, as being indefinite. See Office Action at p. 4. Not in acquiescence to the rejection but in an effort to expedite prosecution, claims 13, 22, 29, 33-36 and 38 have been cancelled thus rendering this rejection moot with respect to those claims.

With respect to claim 6, the Examiner states that there is insufficient antecedent basis for the phrase "said EPS production" in line 2 of claim 6. Id. The term "said" in claim 6 has been deleted. Claim 7 has also been amended to delete the term "the" to provide antecedent basis. Accordingly, claims 6 and 7 and dependent claims thereof are not indefinite and the claims as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 16 for being indefinite as "it merely recites a use without any active, positive steps delimiting how this use is actually practiced." See Office Action at p. 5. Applicants have amended claim 16 to refer to a process of preparing a cheese product and includes the step of adding to a medium suitable for forming cheese, a composition according to claim 1. Accordingly, claim 16 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 17 and states that the phrase "prepared by using the composition" renders the claim indefinite. Id. Claim 17 has been amended to clarify that the cheese product is prepared by the process described in claim 16, wherein the cheese product includes the composition of claim 1. Thus, the term causing ambiguity has been deleted. Accordingly, claim 17 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 19 and contends that the phrase "'capable of modulating moisture content' renders the claim indefinite because it is unclear how this is accomplished." Id. In addition, the Examiner contends that "addition of nearly any material would be expected to modulate, i.e. modify, the moisture content." Id. Applicants respectfully traverse this rejection. Applicants wish to point out that the skilled person on reading the application,

particularly at p. 10, lines 15-17 would readily understand that a primary advantage of the EPS fermentation culture is to achieve an inclusion of EPS into the cheese which will bind water and retard weight loss. By controlling the amount and type of EPS produced during the cheese making process, the moisture level can be modulated as desired – see also p. 10, lines 30-31 of the specification. Accordingly, claim 19 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claims 19, 21, 24 and 26 for insufficient antecedent basis for the phrase "said EPS." Id. Claims 19, 21, 24 and 26 depend from claim 16 which has been amended to recite "an EPS" thus providing sufficient antecedent basis for the phrase "said EPS" in those dependent claims. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 20 and contends that the phrases "'capable of being achieved" and "optimizing' render the claim indefinite because it is not clear how the whey release is optimized." Id. Applicants respectfully traverse this rejection. The specification provides a number of teachings for a person of ordinary skill in the art in this regard. P. 9, lines 20-21 of the specification discloses that the target moisture level in the cheese may be achieved by retarding whey release during the cheese curd curing process. Furthermore, p. 47 line 14 et seq. discloses that by varying the amount and type of EPS present in the curd, the moisture level may be modulated in the "tapping off or dripping off" stage. As explained on p. 47, lines 20 to 21, the terms "tapping off" or "dripping off" describe the stage of whey release. Hence, it is clear to a person of ordinary skill in the art that whey optimization can be achieved by varying the amount and type of EPS used. Accordingly, claim 20 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 21 and contends that "the recitation 'wherein said EPS increases the stability' renders that claim indefinite because it is not clear what is encompassed by the term 'stability,' i.e. color stability, microbial stability." Id. Applicants respectfully traverse this rejection. As explained on p. 11, lines 19 to 21 of the specification, the phrase "increases the stability" refers to the stability of the cheese curd to physical manipulations.

Accordingly, claim 21 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 23 as the Examiner contends that "the recitation 'capable of being manipulated' renders the claim indefinite because it is unclear how this is accomplished." See Office Action at p. 6. Applicants have explained on p. 33, lines 8 to 15 of the specification that by altering sucrose and/or maltose levels during fermentation, the polymerization process may be regulated which can result in the greater cheese curd stability and resilience of the curd to physical manipulation thus allowing the use of conventional cheese manipulating apparatus. Hence, a person of ordinary skill in the art is taught that the required level of curd resistance may be achieved by regulating the sucrose and/or maltose levels during fermentation. Accordingly, claim 23 as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 24 and contends that "the recitation 'capable of forming a cheese curd containing about 50% moisture content' renders the claim indefinite because it is unclear how this is accomplished." Id. Applicants respectfully traverse this rejection. As explained above, a skilled person on reading the application, particularly at p. 10, lines 15-17 would readily understand that a primary advantage of the EPS fermentation culture is to achieve an inclusion of EPS into the cheese which will bind water and retard weight loss. By controlling the amount and type of EPS produced during the cheese making process, the moisture level can be modulated as desired – see p. 10, lines 30-31 of the specification. Accordingly, claim 24 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

The Examiner has rejected claim 26 and contends that "the recitation 'capable of improving at least one of the texture, aroma, flavor ... of the cheese product' renders the claim indefinite because it is unclear how this [is] accomplished and what the properties of the cheese product are being compared." Id. The specification at p. 33, lines 8-15 explains that by altering sucrose and/or maltose levels during fermentation, the polymerization process may be regulated which can result in the greater cheese curd stability and resilience of the curd to physical manipulation, allowing the use of conventional cheese manipulating apparatus. Hence, a person

of ordinary skill in the art is taught that the required level of curd resistance may be achieved by regulating the sucrose and/or maltose levels during fermentation. The beneficial effects taught in claim 26 are accomplished through the use of the composition of the present invention – see page 33, line 28 to p. 34, line 2 of the specification. It would be clear to a person of ordinary skill in the art that a comparison would be made to a control (i.e. with a process of making cheese where the composition of claim 1 is not added). Accordingly, claim 26 is not indefinite and the claim as a whole would apprise one of ordinary skill in the art of its scope. Applicants respectfully request reconsideration and the withdrawal of this rejection.

Rejection of claims under 35 U.S.C. § 102

The Examiner has rejected claims 1-15, 17-28, 30-32 and 37-38 under 35 U.S.C. § 102(b) as being anticipated by Perry et al, *Journal of Dairy Science*, Vol. 80, p. 799-805 (1997) ("Perry"). See Office Action at p. 7. Not in acquiescence to the rejection but in an effort to expedite prosecution, claims 4-5, 13, 22 and 38 have been cancelled without prejudice thus rendering this rejection moot with respect to those claims. Claims 2-3, 6-12, 13-15, 17-21, 23-28 and 30-32 depend from independent claim 1. Claim 37 is an independent claim.

Amended claim 1 relates to a composition suitable for forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS.

Amended claim 37 recites a culture of *Lactobacillus sakei* strain 570 deposited as DSM 15889 at the Deutsche Sammlung von Mikroorganismen und Zellkulturen GnbH.

Perry describes the effect of an exopolysaccharide-producing starter culture on the moisture content of low fat mozzarella cheese. See Abstract. Perry, in the "Milk and Cultures" section on p. 800, describes the microbial strains used but does not disclose a composition that includes a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc*

mesenteroides 808. Perry further does not describe a culture of *Lactobacillus sakei* strain 570 deposited as DSM 15889 at the Deutsche Sammlung von Mikroorganismen und Zellkulturen GnbH.

Accordingly, claims 1 and 37 and dependent claims thereof are not anticipated by Perry. Applicants respectfully request reconsideration and withdrawal of this rejection.

Rejection of claims under 35 U.S.C. § 103

Perry

The Examiner has rejected claims 10 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Perry. See Office Action at p. 11. Claims 10 and 11 depend from independent claim 1.

As explained above, Perry does not teach a composition suitable for forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS. Perry further does not suggest a composition suitable for forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS.

In addition, the selection of the particular strains described in amended claim 1 gives rise to a surprising technical effect not taught or suggested in Perry. In particular, the use of the specific strains recited in claim 1 changes the rate of acidification by the starter culture. This feature is described in particular on p. 64, lines 24 to 26; p. 65, lines 26 to 29; p. 66, line 29 to p. 67, line 2; p. 68, lines 4 to 6; and in tables 2 to 5 of the specification. The ability to control the

rate of acidification by the starter culture is advantageous in cheese making because it allows greater control over the cheese making process and the properties of the resulting cheese.

Perry does not teach or suggest that the strain used in Perry can change the rate of acidification by the starter culture. There is no suggestion in Perry that it would be advantageous to select a strain that is able to change the rate of acidification by the starter culture. The skilled person reading Perry would therefore not be motivated to look for a strain that has this feature and it would therefore not be obvious for the skilled person to use the strains specified in the amended claim 1 or to provide the compositions described in the amended claim 1.

Since claims 10 and 11 depend from independent claim 1, those claims should be patentable over Perry for at least the reasons described above. Applicants respectfully request reconsideration and the withdrawal of this rejection.

Perry and Degeest

The Examiner has rejected claims 13-14 and 32 under 35 U.S.C. § 103(a) as being unpatentable over Perry and Degeest et al., *Journal of Applied Microbiology*, Vol. 91, p. 470-477 (2001) ("Degeest"). See Office Action at p. 12. Not in acquiescence to the rejection but in an effort to expedite prosecution, claim 13 has been cancelled thus rendering this rejection moot with respect to this claim. Claims 14 and 32 depend from independent claim 1.

As previously explained, Perry does not teach or suggest a composition suitable for forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS.

This defect is not remedied by Degeest. Degeest discloses EPS biosynthesis by *Lactobacillus sakei* 0-1. See Abstract. Like the Perry reference, Degeest does not disclose a composition comprising any of the specific bacterial strains recited in claim 1, let alone that the use of the specific strains recited in claim 1 can advantageously change the rate of acidification by the starter culture. Therefore, Degeest does not teach or suggest a composition suitable for

forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS.

Accordingly, since claims 14 and 32 are dependent on claim 1, claims 14 and 32 are patentable over the combination of Perry and Degeest for at least the reasons described above. Applicants respectfully request reconsideration and the withdrawal of this rejection.

Perry and Tallgren

The Examiner has rejected claims 15 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Perry and Tallgren et al., *Applied and Environmental Microbiology*, Vol. 65, No. 2, p. 862-864 (1999) ("Tallgren"). See Office Action at p. 13. Claims 15 and 31 depend from independent claim 1.

As previously explained, Perry does not teach or suggest a composition suitable for forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3, *Lactococcus lactis* ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS.

This defect is not remedied by Degeest. Tallgren discloses EPS-producing bacteria from sugar beets. See Abstract. Like the Perry reference, Tallgren does not disclose a composition comprising any of the specific bacterial strains recited in claim 1, let alone that the use of the specific strains recited in claim 1 can advantageously change the rate of acidification by the starter culture. Therefore, Tallgren does not teach or suggest a composition suitable for forming cheese, the composition the a starter acidification culture and an exopolysaccharide (EPS) fermentation culture wherein the EPS culture contains a viable lactic acid microorganism selected from the group consisting of *Streptococcus thermophilus* V3,

Lactococcus lactis ssp *cremoris* 322, *Lactobacillus sakei* 570, and *Leuconostoc mesenteroides* 808, wherein the lactic acid microorganism is capable of producing an enzyme, and wherein the enzyme is capable of producing an EPS.

Accordingly, since claims 15 and 31 are dependent on claim 1, claims 15 and 31 are patentable over the combination of Perry and Tallgren for at least the reasons described above. Applicants respectfully request reconsideration and the withdrawal of this rejection.

Degeest

The Examiner has rejected claim 37 under 35 U.S.C. § 103(a) as being unpatentable over Degeest. See Office Action at p. 14. Amended claim 37 recites a culture of *Lactobacillus sakei* strain 570 deposited as DSM 15889 at the Deutsche Sammlung von Mikroorganismen und Zellkulturen GnbH. As previously explained, Degeest discloses EPS biosynthesis by *Lactobacillus sakei* 0-1. See Abstract. Degeest does not teach or suggest a culture of *Lactobacillus sakei* strain 570 deposited as DSM 15889 at the Deutsche Sammlung von Mikroorganismen und Zellkulturen GnbH.

Accordingly, claim 37 is patentable over Degeest. Applicants respectfully request reconsideration and the withdrawal of this rejection.

CONCLUSION

For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the pending rejections. A petition for an extension of time is attached.

Applicants believe that the claims now pending are in condition for allowance. Should any fees be required by the present Amendment, the Commissioner is hereby authorized to charge Deposit Account **19-4293**.

Respectfully submitted,

Date: 3-3-10

Customer Number: 27890
STEPTOE & JOHNSON LLP
1330 Connecticut Ave., NW
Washington, DC 20036
Tel: 202-429-3000
Fax: 202-429-3902

Harold H. Fox
Reg. No. 41,498